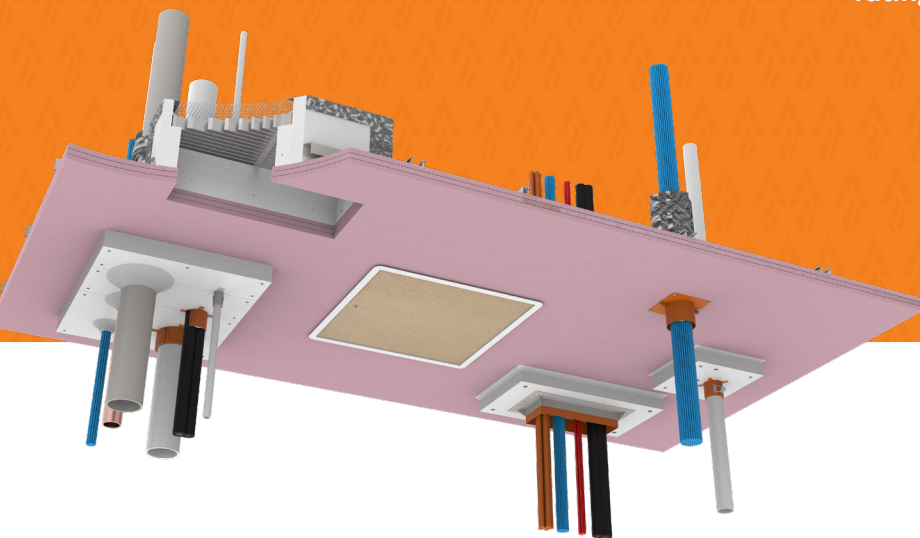


2 HOUR PLASTERBOARD CEILINGS

Service Penetrations



Approvals for service penetrations in fire-rated plasterboard ceilings are limited across the market, however Trafalgar Fire have a range of fire stopping systems that are tested specifically for plasterboard ceilings to AS1530.4:2014 with RISF ratings.



SYSTEMS

- FyreBOARD Maxilite®
- FyreFLEX & TWrap
- FyreDAMPER
- FyreBOX Maxi and Mini
- FyreCOLLAR Premium Retrofit Collar
- FyreSHIELD™ PLUS Access Panels

APPLICATIONS

Plumbers	<ul style="list-style-type: none"> • PVC pipes • PEX Pipes • Copper and Steel Pipes
Electricians	<ul style="list-style-type: none"> • Data cables • Conduits • Power cables
HVAC&R	<ul style="list-style-type: none"> • Pair coil bundles • Refridgeration pipes
Plasterers	<ul style="list-style-type: none"> • Fire rated ceiling hatch
Active Fire	<ul style="list-style-type: none"> • Fire Cables • Sprinkler Pipes

TRADES



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COMPLIANCE



COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE (NCC)

Formerly known as BCA

Trafalgar Fire's plasterboard ceiling approvals have been fire tested to AS1530.4:2014 and approved in accordance with AS4072.1:2005 for a range of service types and applications.

The FRL's given show that the approved systems stop the physical spread of fire where the services penetrate a fire rated ceiling, and show that the temperature on the un-exposed side of the fire does not rise by more than 180 degrees.

Fire rated floor/ceiling systems also have an additional requirement to measure temperatures inside the ceiling cavity, called Resistance to the Incipient Spread of Fire (or RISF). Where service penetrations are required in these ceilings, the penetration system must also achieve the required level of RISF rating as well as the standard FRL as above. See over page for more details.



As with all passive fire installations, the fire stopping system used must be installed as per the manufacturer's instructions and test/assessment reports otherwise the end result will not be compliant. Please refer to each individual product manual for specific installation instructions which reflect how the systems have been tested and approved.

This manual specifically reviews the tested systems approved for 2 hour (3x layer) plasterboard ceilings, for 1 hour (2x layer) plasterboard ceiling constructions please refer to the [Service Penetration in 60 Minute Plasterboard Ceilings Technical Manual](#).

TEST AND ASSESSMENT REPORTS

The systems in this manual are covered by test reports which are written by a NATA accredited facility and can be used as evidence of compliance under the NCC C3.15. Please email the technical team with your details at technical@tgroup.com.au if you require a copy of the report.

COMPLIANCE



RESISTANCE TO THE INCIPIENT SPREAD OF FIRE (RISF)

Aside from an FRL, ceiling systems are subject to another requirement under AS1530.4 called the resistance to the incipient spread of fire (RISF). The insulation value of a service penetration FRL is measured on the top side of the floor/ceiling system, and the RISF is based on the highest individual temperature reading inside the cavity. This requirement does not apply to wall and floor systems.

To maintain a RISF rating, the maximum temperature measured during a test must remain below 250°C inside the cavity. An important factor to achieving this rating is the size of the cavity present in a floor ceiling system.

A larger cavity will keep testing temperatures lower for longer. This is because the addition air gap present assists in cooling the building elements. As such it is considered that testing of this nature should only be applied to floor/ceiling systems of equal or larger cavity sizes that what was tested. Because of this, our access panel and penetration systems have been tested with one of the smallest cavity sizes that would practically be present on site (500mm).

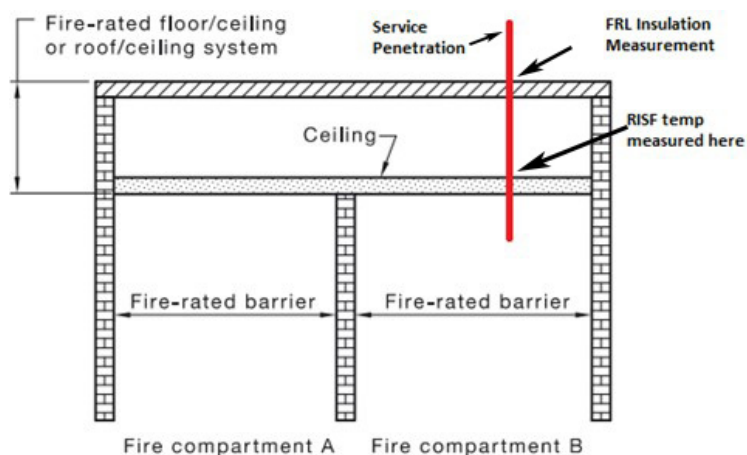


Figure 1- Resistance to the Incipient Spread of Fire rating required for this floor/ceiling system

The NCC defines RISF as:

Resistance to the incipient spread of fire, in relation to a ceiling membrane, means the ability of the membrane to insulate the space between the ceiling and roof, or ceiling and floor above, so as to limit the temperature rise of materials in this space to a level which will not permit the rapid and general spread of fire throughout the space.

Explanatory information:

Resistance to the incipient spread of fire refers to the ability of a ceiling to prevent the spread of fire and thermally insulate the space between the ceiling and the roof or floor above. "*Resistance to the incipient spread of fire*" is superior to "fire-resistance" because it requires a higher standard of heat insulation.

The definition is used in Volume Two for separating floors/ceilings for a Class 1a dwelling located above a non-appurtenant private garage.

The only way a system approval can be obtained for a penetration in a fire rated ceiling is to fire test a floor ceiling/system complete with a cavity and measure the temperature inside the cavity to ensure it meets the strict NCC requirements for RISF.

IMPORTANT NOTE – An FRL alone does not comply with the NCC for plasterboard ceilings (Refer to section C3.15 of the NCC)

APPROVED CEILING CONSTRUCTION

The fire rated ceilings that are referenced in this manual must be tested or assessed to achieve an FRL of at least -/120/120, and have the following minimum construction requirements:

Construction Aspect	Minimum Specification
Sheeting	3 x 16mm fire rated plasterboard
Ceiling Cavity	Min 500mm high
Approved floor/ceiling construction	Timber or steel framing

For any other types of ceiling construction contact technical@tgroup.com.au.

FRL TABLES

ACCESS PANELS



Application	System	FRL	RISF* (mins)	Test Report
Access Panels	FyreSHIELD Plus	-/120/120	✓	FAS 200221

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



FRL TABLES

PLUMBING PENETRATIONS



The following penetration systems require the ceiling to be thickened locally with 60mm Maxilite board before they can be sealed. Refer to the installation drawings at the end of this manual for specific detailing.

Application	Specification	System	FRL	RISF*	Test Report
Metal Pipes	Copper or steel pipes up to 50mm	FyreBOARD Maxilite, FyreFLEX & TWrap	-/120/120	✓	RTL FT 1553
	Steel pipes up to 100mm		-/120/120	✓	RTL FT 1553
	Copper or steel pipes up to 100mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini, & TWrap	-/120/120	✓	FC10266
Plastic Pipes	PVC pipes 100mm	FyreBOARD Maxilite & FyreCOLLAR	-/120/120	✓	RTL FT 1553
	PVC pipes up to 80mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini, & TWrap	-/120/120	✓	FC10266
	PEX pipes up to 32mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini, & TWrap	-/120/120	✓	FC10266
	PEX-Al-PEX pipes up to 32mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini, & TWrap	-/120/120	✓	FC10266

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



FRL TABLES

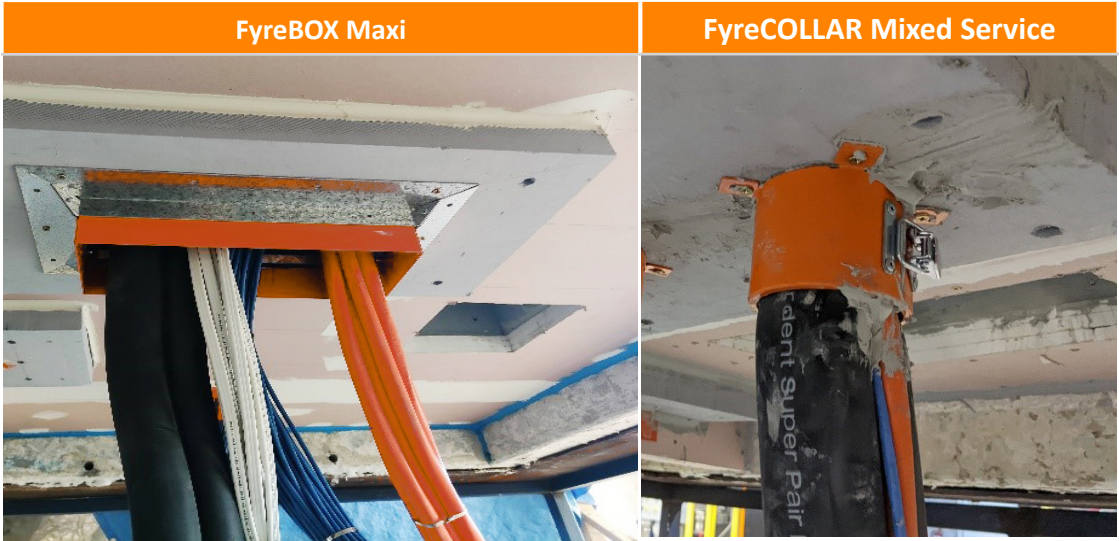
HVAC&R PENETRATIONS



The following penetration systems require the ceiling to be thickened locally with 60mm Maxilite board before they can be sealed. Refer to the installation drawings at the end of this manual for specific detailing.

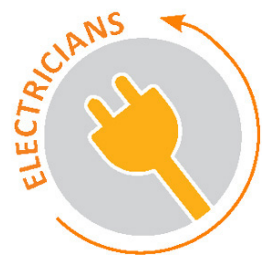
Application	Specification	System	FRL	RISF*	Test Report
Single Insulated Pipes	Copper or steel pipes up to 50mm with FR insulation (any thickness)	FyreBOARD Maxilite, FyreBOX Maxi/Mini & TWrap	-/120/120	✓	FC10266
	Stainless steel pipe up to 50mm with rockwool insulation	FyreBOARD Maxilite, FyreBOX Maxi/Mini & TWrap	-/120/120	✓	FC10266
Pair coil with associated cable	Pair coils up to 9 & 19mm with up to 13mm thick PE insulation	FyreBOARD Maxilite, FyreBOX Maxi/Mini & TWrap	-/120/120	✓	FC10266
	Pair coils up to 9 & 19mm with up to 20mm thick FR insulation	FyreBOARD Maxilite, FyreBOX Maxi/Mini & TWrap	-/120/120	✓	FC10266
	Pair coils up to 3/8" and 5/8" with FR	FyreBOARD Maxilite, FyreCOLLAR & TWrap	-/120/120	✓	RTL FT 1553

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



FRL TABLES

CABLE PENETRATIONS



The following penetration systems require the ceiling to be thickened locally with 60mm Maxilite board before they can be sealed. Refer to the installation drawings at the end of this manual for specific detailing.

Application	Specification	System	FRL	RISF*	Test Report
Power Cables – Copper	All copper core power cables	FyreBOARD Maxilite, FyreBOX & TWrap	-/120/120	✓	FC10266
Communications & Data cables	NBN Fibre cables (with or without conduit)	FyreBOARD Maxilite, FyreBOX & TWrap	-/120/120	✓	FC10266
	All copper core communications cables.	FyreBOARD Maxilite, FyreBOX & TWrap	-/120/120	✓	FC10266
	Cable bundle up to 8 x CAT6 & 5 x TPS 1.5mm²	FyreBOARD Maxilite, FyreFLEX Sealant and TWrap	-/120/120	✓	RTL FT 1553
Power Cables – Aluminium	Single core cables in bundles of up to 4 x 240mm² + optional 120mm² earth cable	FyreBOARD Maxilite, FyreBOX & TWrap	-/90/90 (Contact Trafalgar for higher FRL's)	✓	FC10266
	4C+E 16mm² Cables in bundles up to 4x	FyreBOARD Maxilite, FyreBOX & TWrap	-/90/90 (Contact Trafalgar for higher FRL's)	✓	FC10266

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.

* multiple bundles per FyreBOX is approved, with 50mm spacing between bundles



FRL TABLES

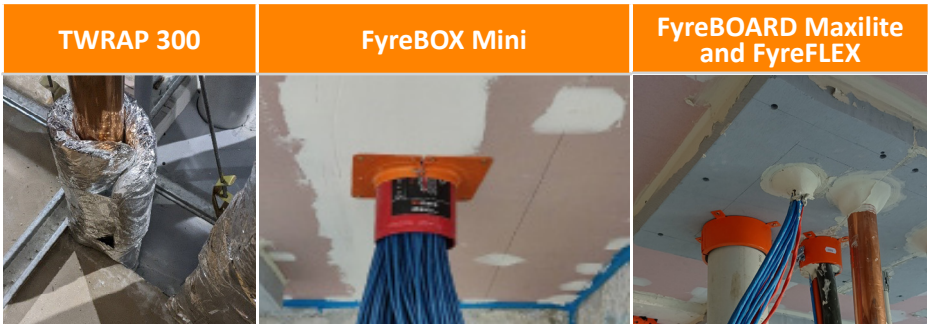
ACTIVE FIRE



The following penetration systems require the ceiling to be thickened locally with 60mm Maxilite board before they can be sealed. Refer to the installation drawings at the end of this manual for specific detailing.

Application	Specification	System	FRL	RISF*	Test Report
Sprinkler Pipes	Copper or steel pipes up to 50mm	FyreBOARD Maxilite, FyreFLEX Sealant and TWrap	-/120/120	✓	RTL FT 1553
	Steel pipes up to 100mm		-/120/120	✓	RTL FT 1553
	Copper or steel pipes up to 100mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini & TWrap	-/120/120	✓	FC10266
Fire Cables – Copper	All copper core power cables	FyreBOARD Maxilite, FyreBOX & TWrap	-/120/120	✓	FC10266

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



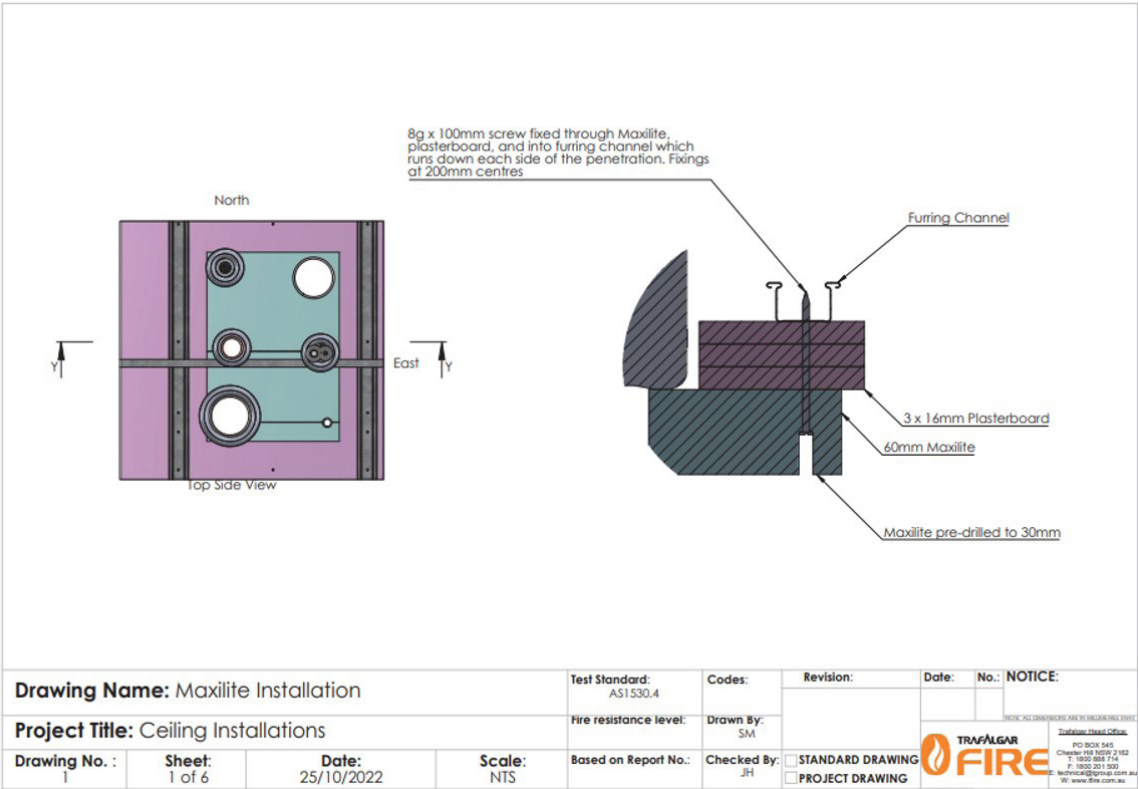
OVERSIZED OPENINGS

Typical penetration systems described in this manual involve locally thickening the plasterboard with Maxilite Board. This approach can be extended to cover oversized/larger openings.

Maxilite can be fixed over openings up to 350 x 500mm with approved services penetrating through the board (per above FRL tables).

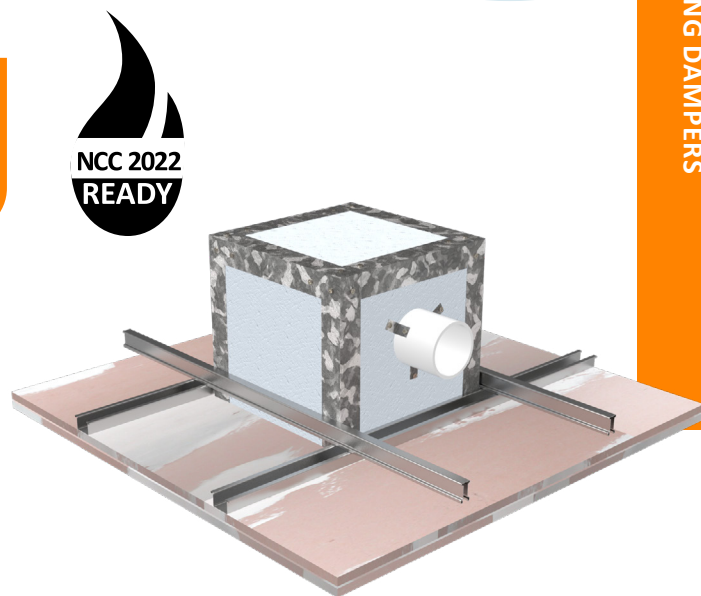


Construction Aspect	Specification
Board	60mm Maxilite, overlapping 100mm minimum past the opening
Fixings	Minimum 8g x 100mm steel screws fixed at 200mm centres. Screws to be secured into ceiling supports along two sides of the penetration.
Sealant	FyreFLEX Sealant used to bed the Maxilite the plasterboard, and in a small 10 x 10mm fillet around the perimeter.



CEILING DAMPERS

Ceiling dampers are critical in buildings to allow the movement of air whilst maintaining the required fire separation required by the National Construction Code. Trafalgar are proud to have tested ceiling mounted dampers to AS1530.4: 2014 in 2 and 3 layer plasterboard ceilings to provide compliant solutions up to 2 hour fire ratings.



APPLICATIONS INCLUDE

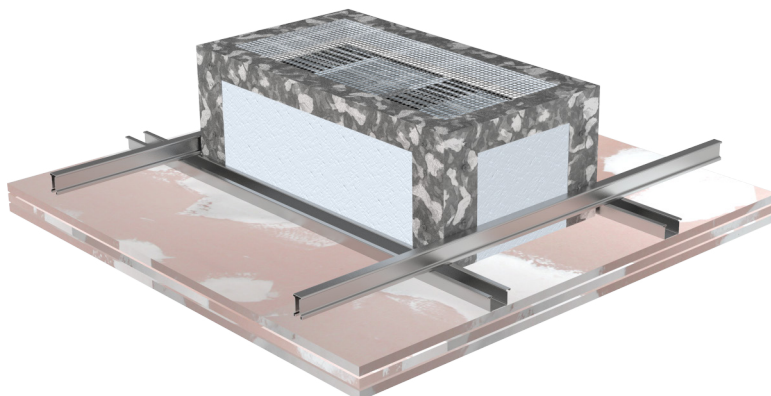
- Bathroom fan exhausts
- Small return air gills
- Connection to flexi duct
- Ceiling mounted speakers



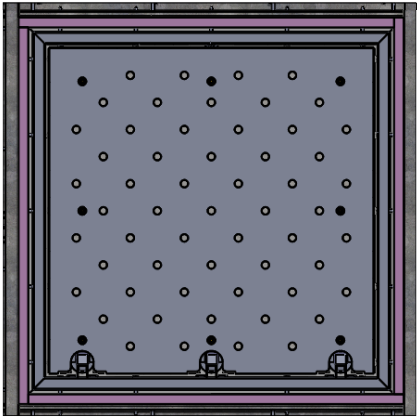
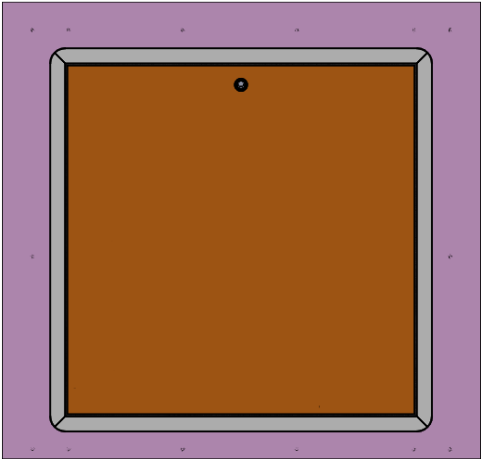
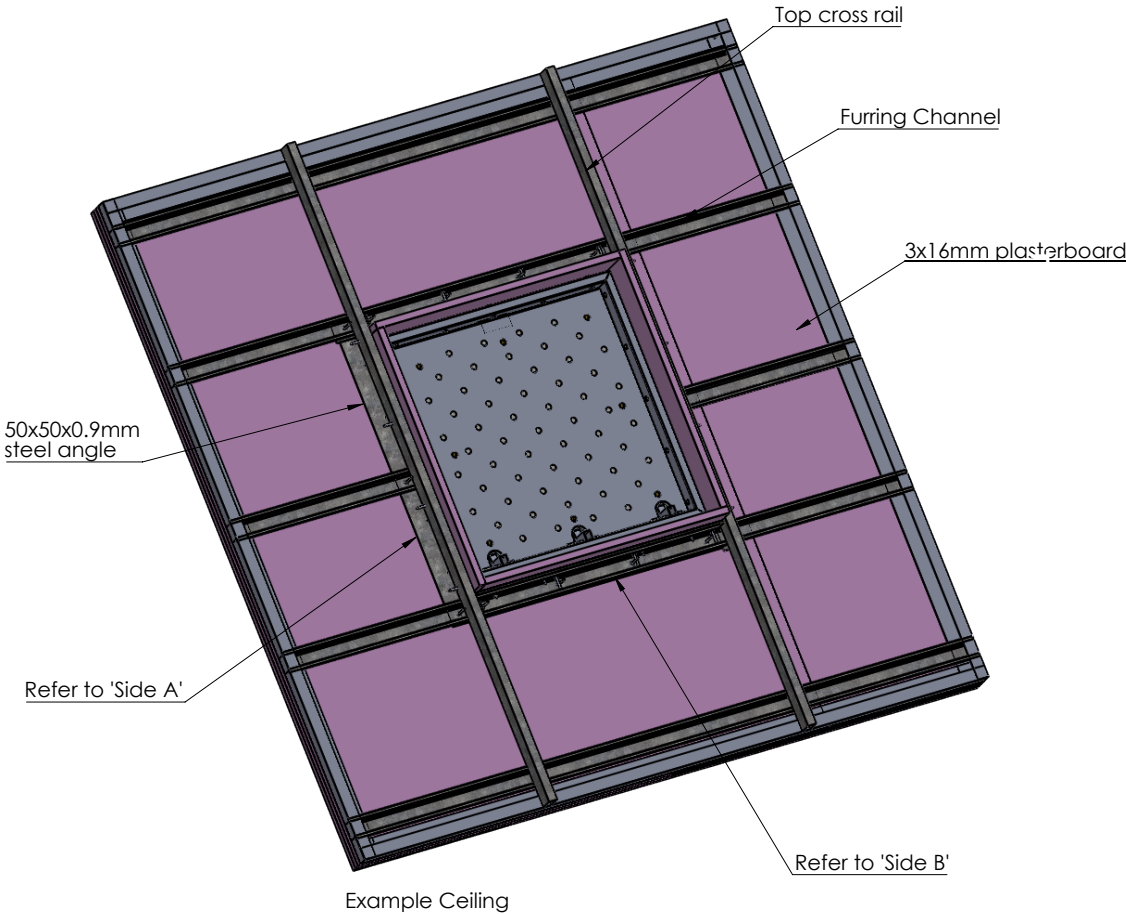
PRODUCT FEATURES

- Meets the RSIF criteria for ceilings
- Testing to AS1530.4-2014
- Approved for 2x & 3x layer ceilings
- -/60/60 or -/120/120 with 60 RISF ratings
- Australian Made Quality
- Custom sizes/made to order

Refer to the [FyreDamper Manual](#) for more information.



NOTE:
Bearers and flooring not shown



Drawing Name: Overview

Project Title: 2 Hour Ceiling with Access Panel

Drawing No. :
1

Sheet:
1 of 3

Date:
26/05/2021

Scale:
NTS

Test Standard:
AS1530.4

Fire resistance level:

Based on Report No.:

Codes:

Drawn By:
RB

Checked By:
JH

Revision:

Date:

No.:

NOTICE:

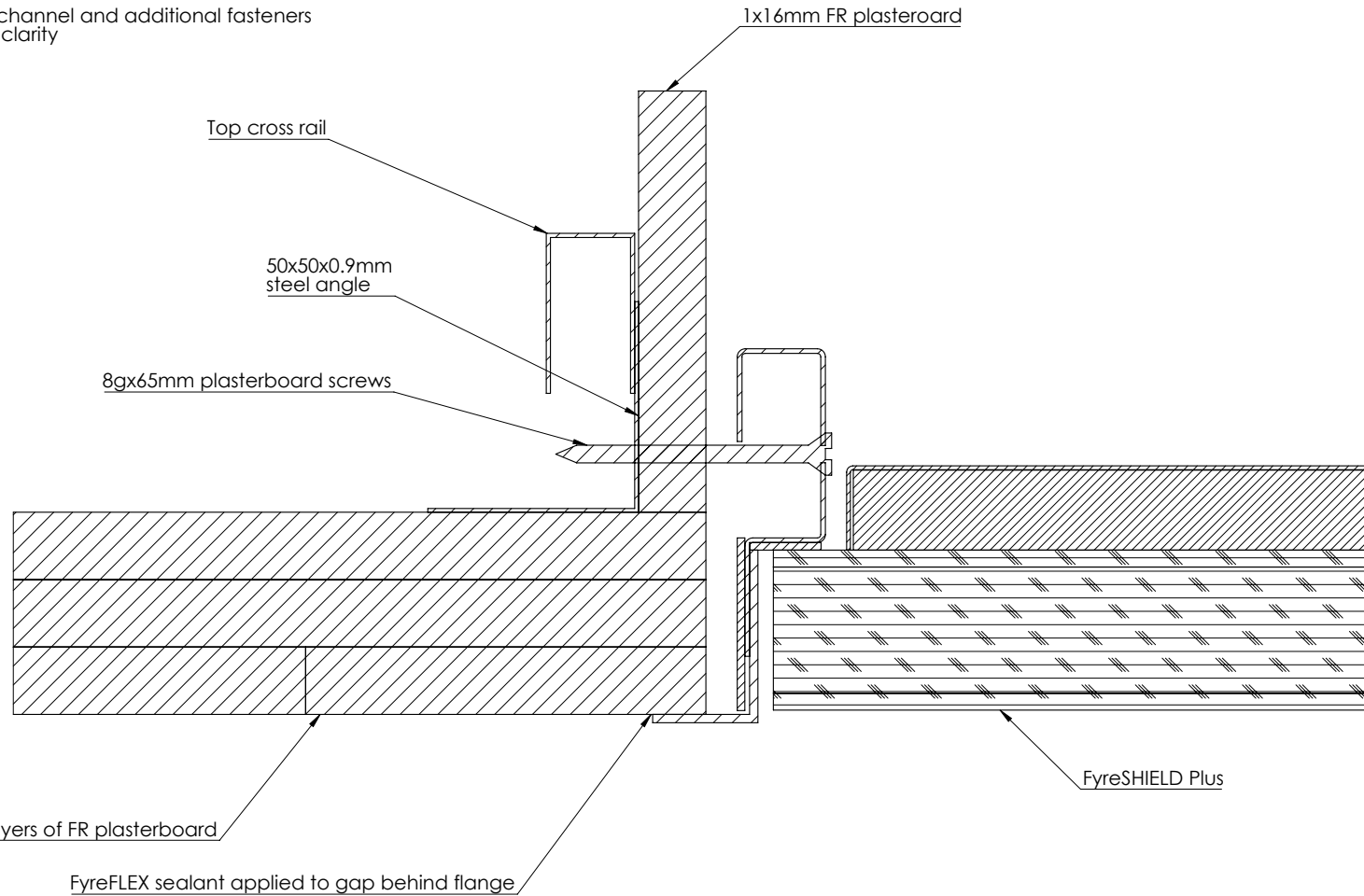
NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)




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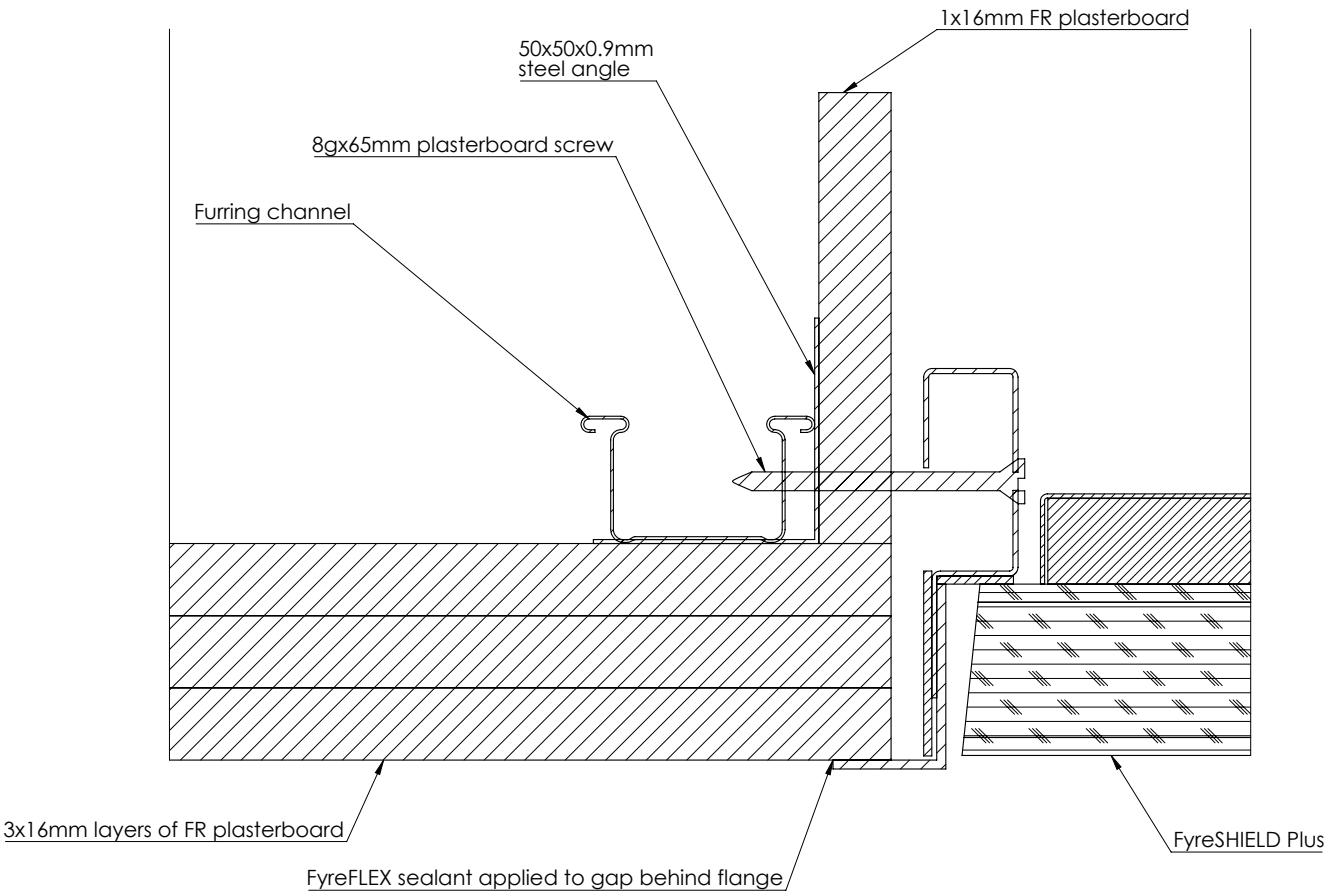
☐ STANDARD DRAWING
☐ PROJECT DRAWING


NOTE: Furring channel and additional fasteners not shown for clarity

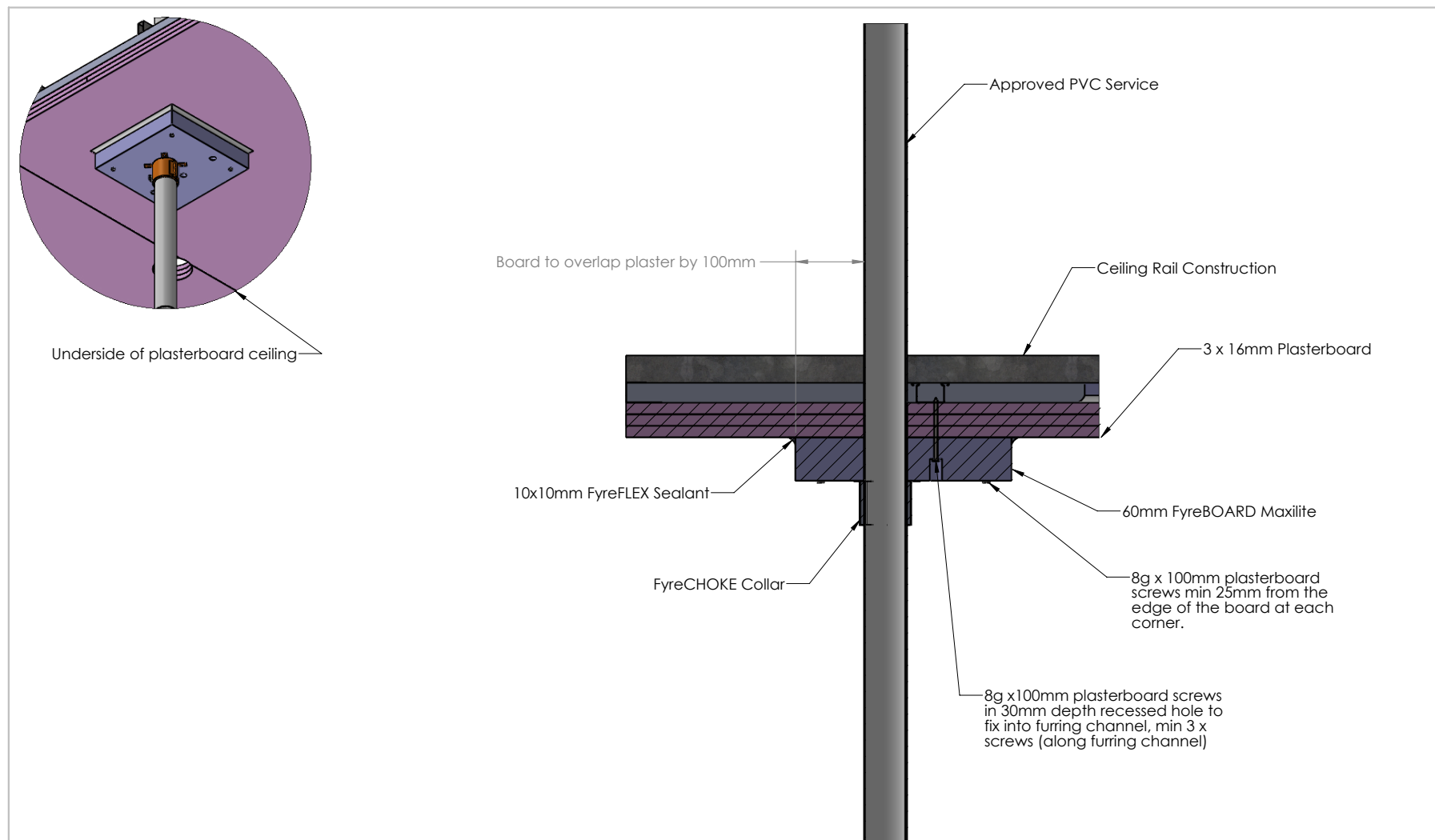


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Drawing No. : 2	Sheet: 2 of 3	Date: 26/05/2021	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			

NOTE: Additional fasteners not shown for clarity



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Drawing Name: FyreCHOKE Collar

Test Standard:
AS1530.4

Codes:
Revision:
Date:
No.:
NOTICE:
Project Title: Ceiling Penetrations Technical Drawings

Fire resistance level:
-/120/120

Drawn By:
SM

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
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Sheet:
1 of 4

Date:
26/05/2021

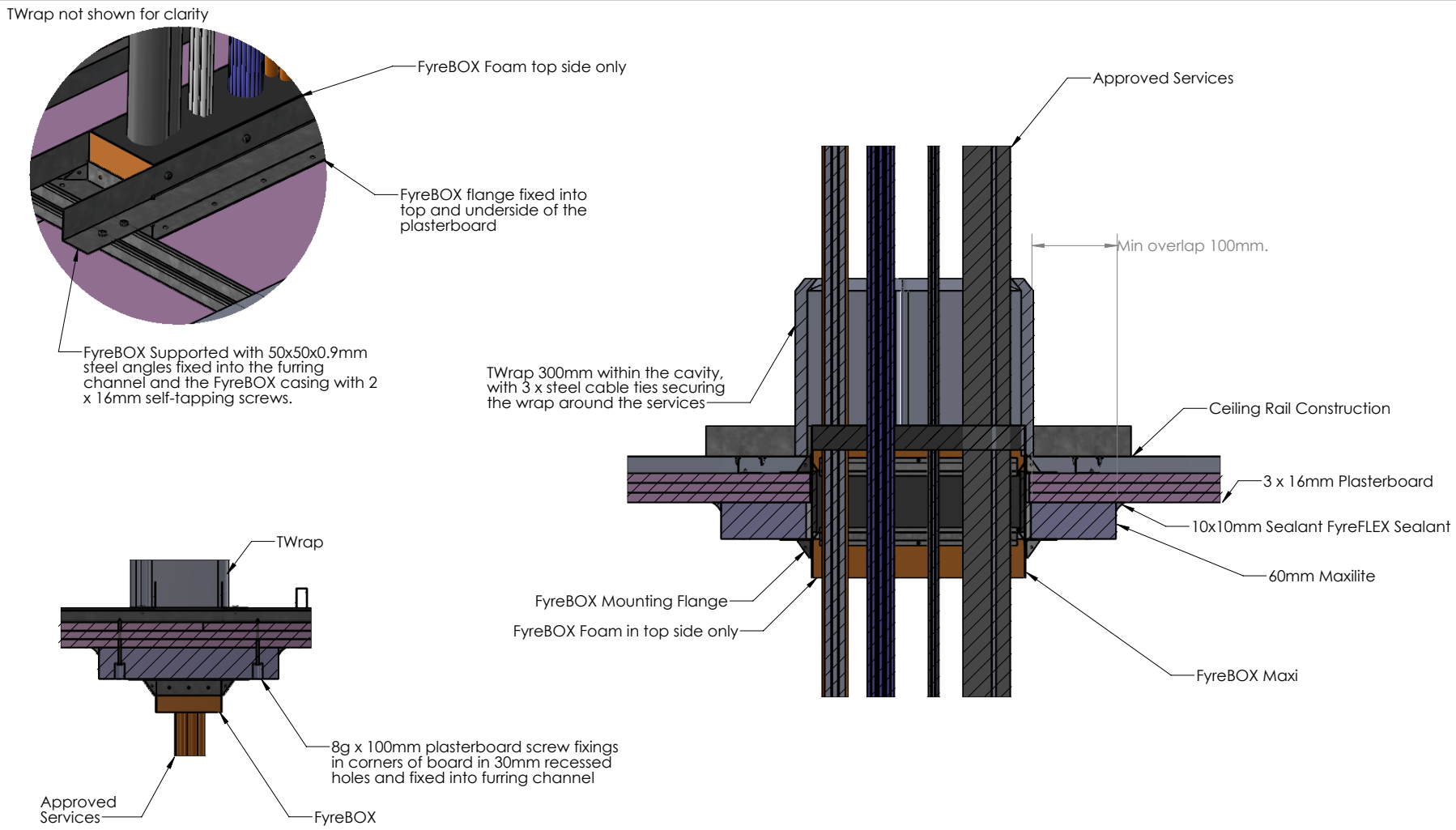
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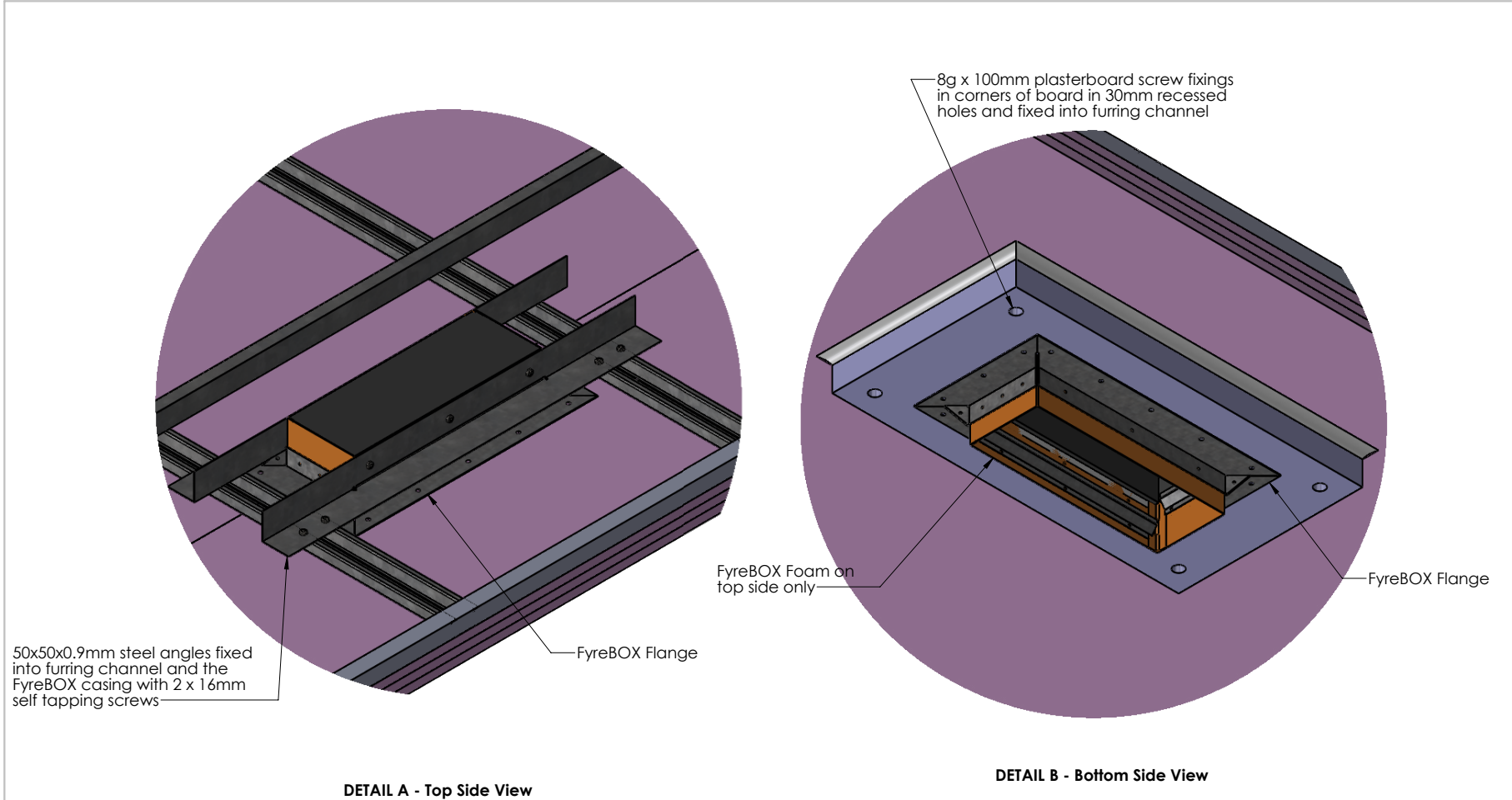
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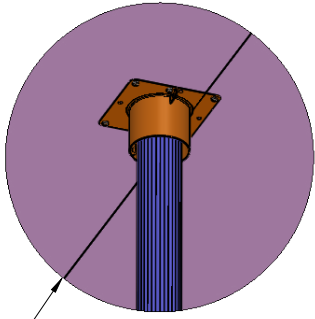
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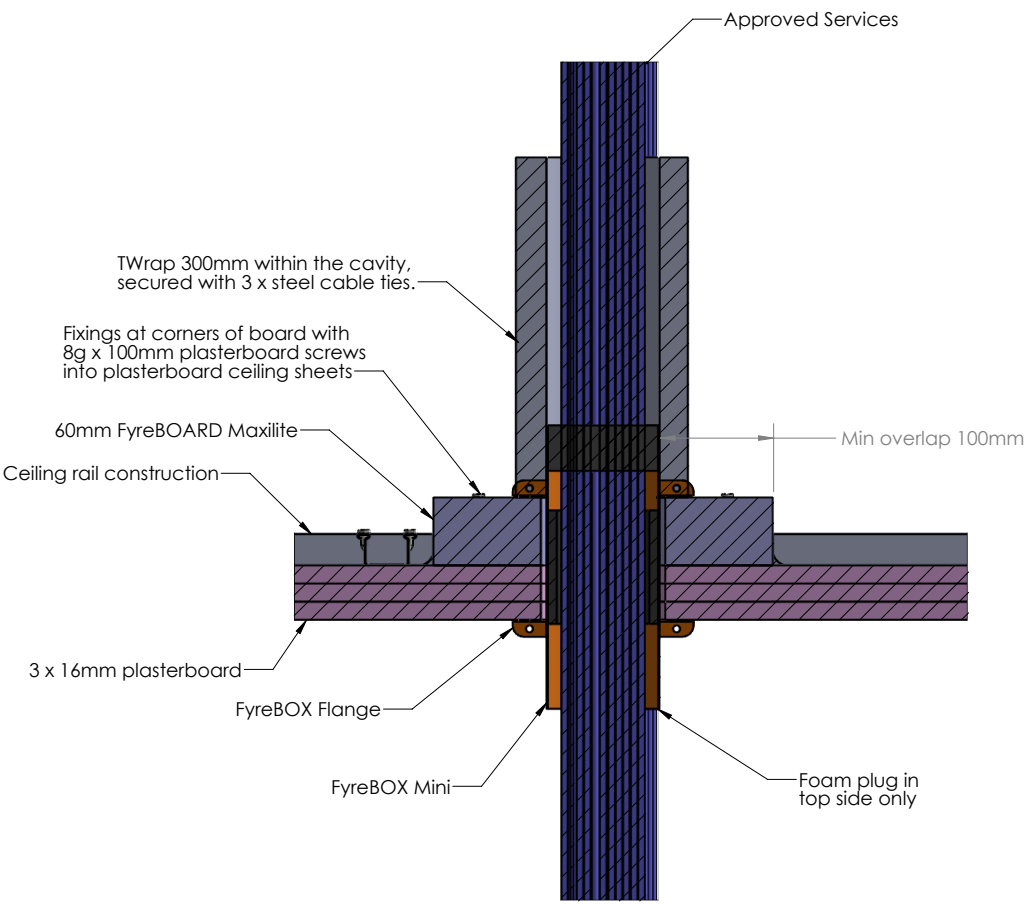
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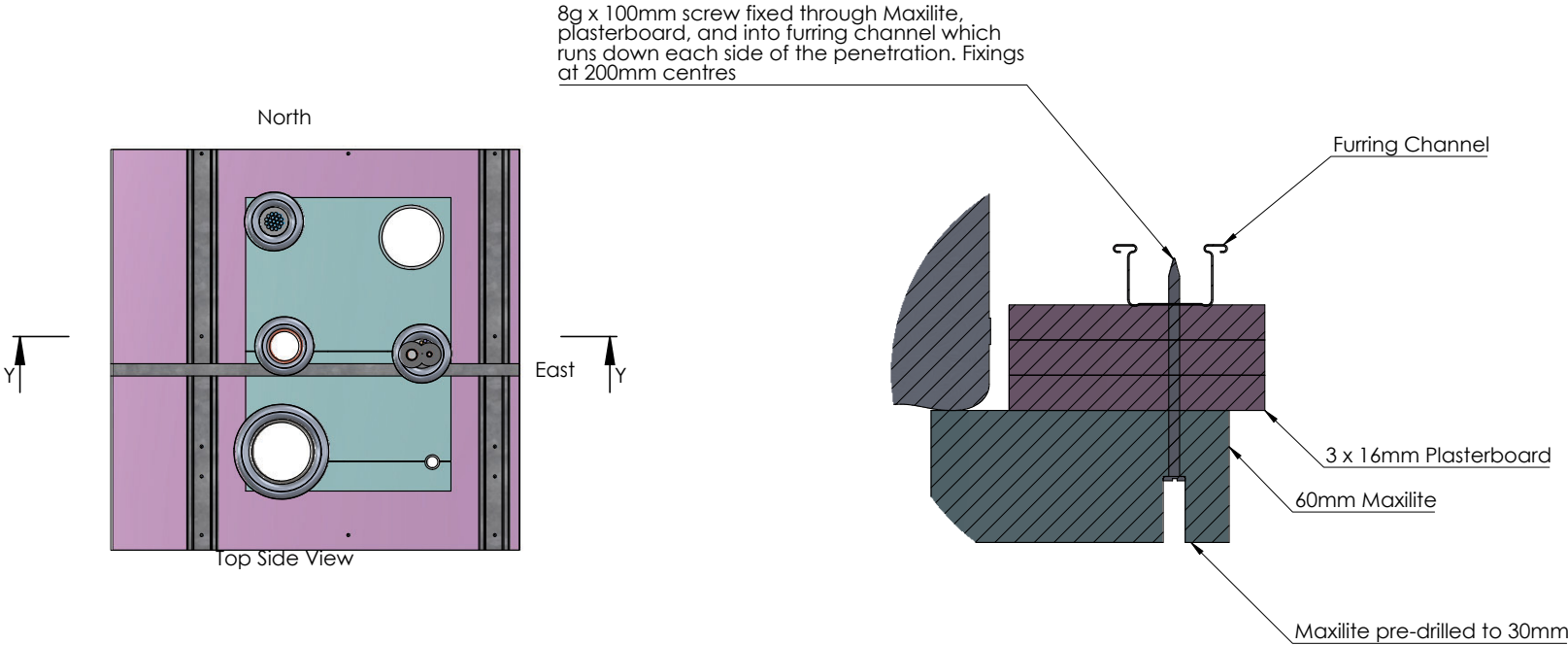
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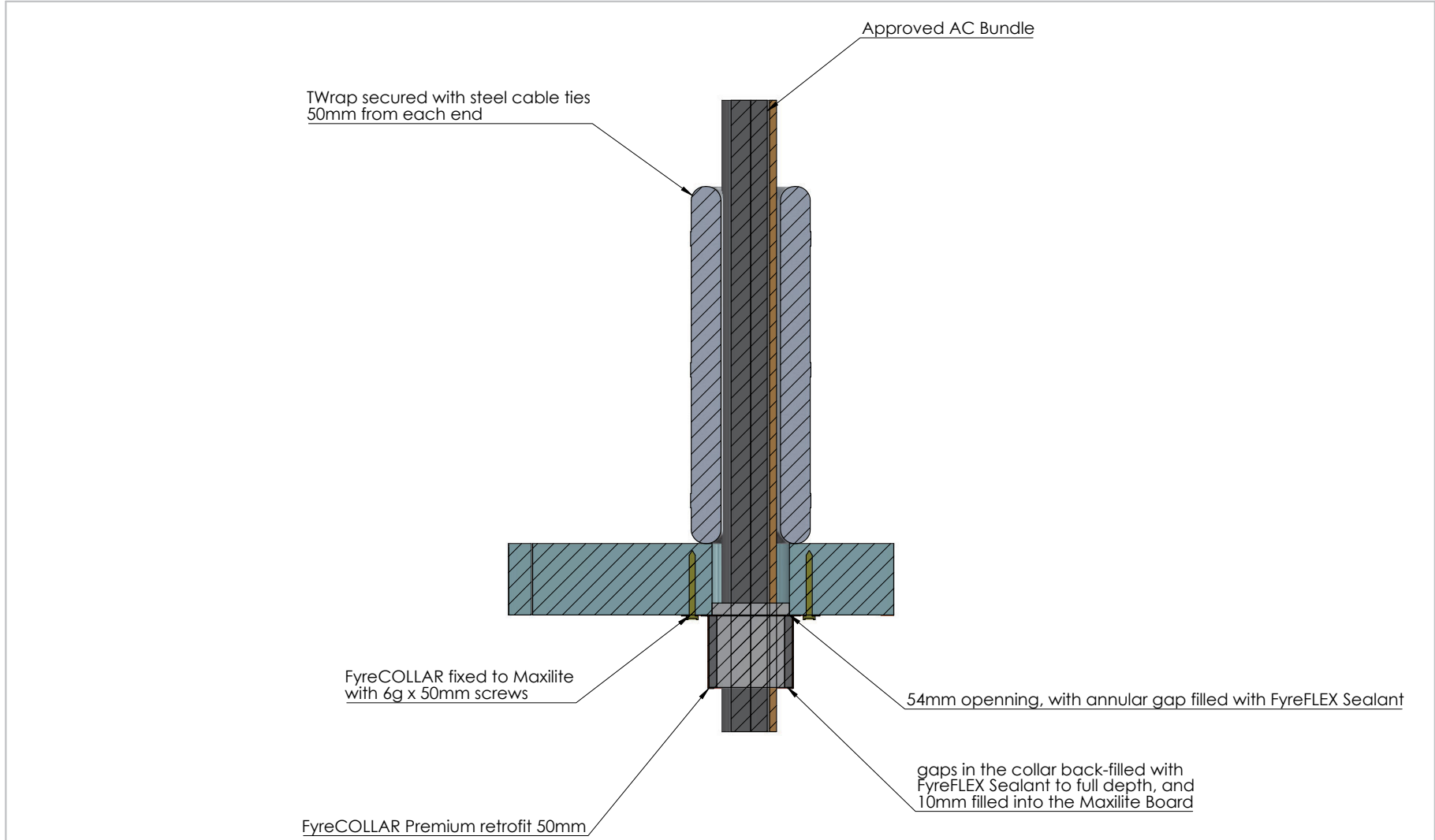
underside of plasterboard ceiling




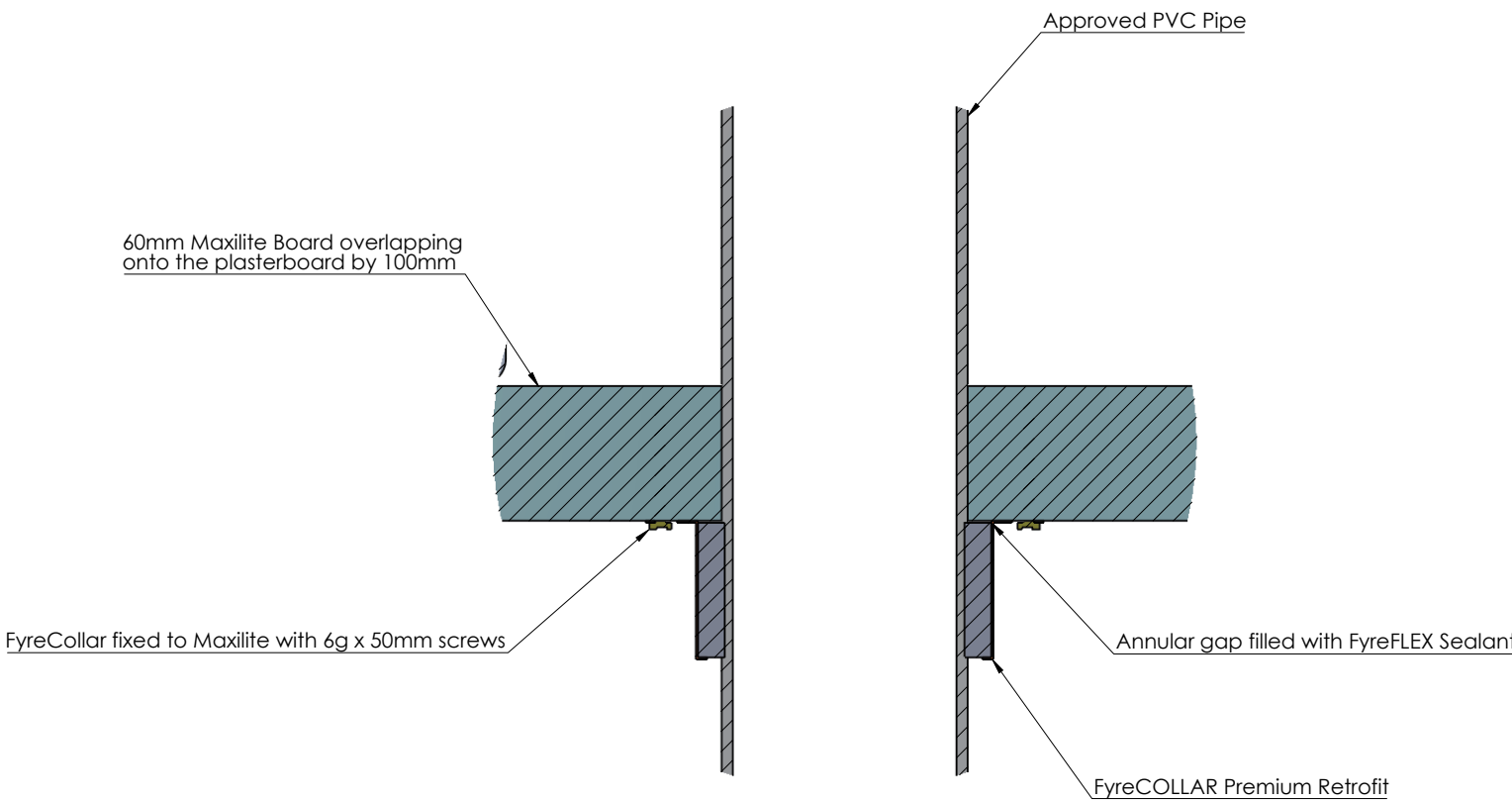
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Drawing No. : 4	Sheet: 4 of 4	Date: 26/05/2021	Scale: NTS						




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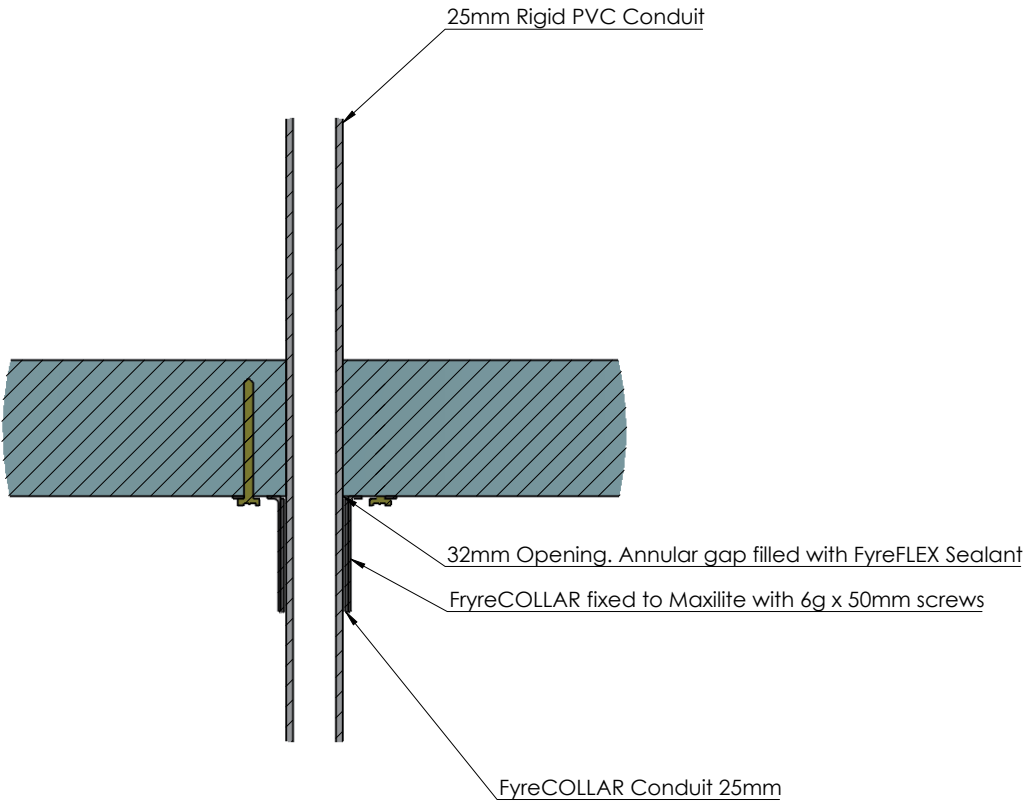



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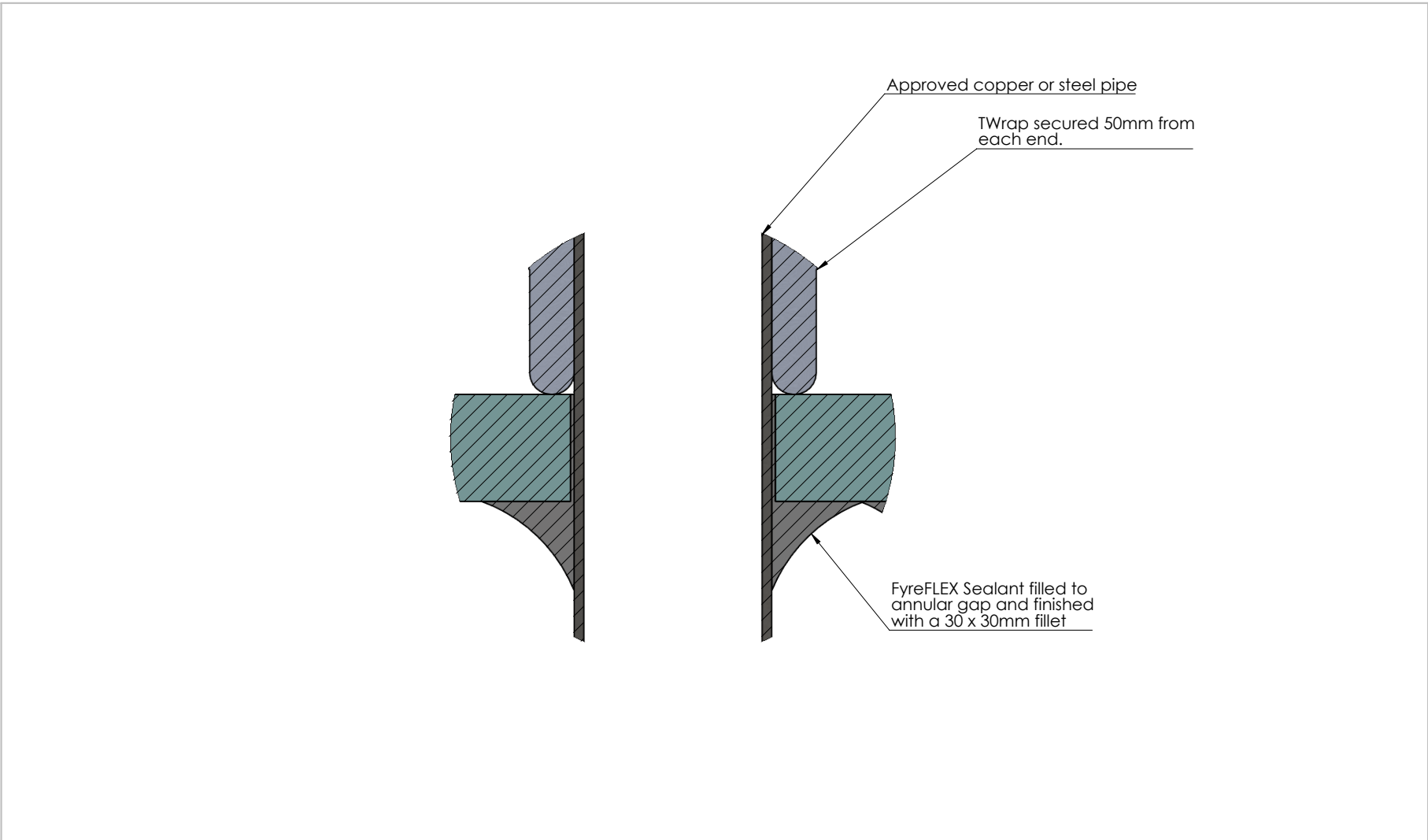



DETAIL D

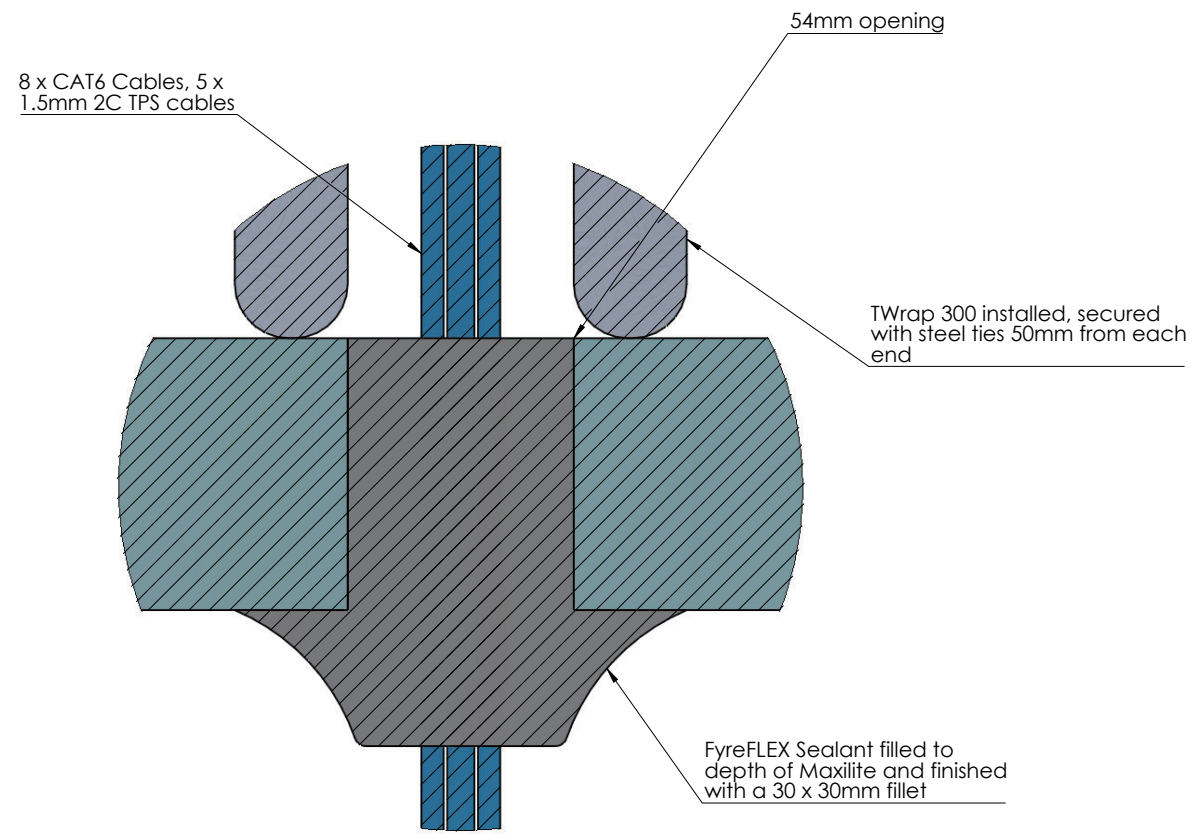
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Drawing Name: PVC Conduit				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:
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Drawing Name: Metal Pipes				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:
Project Title: Ceiling Installations				Fire resistance level:	Drawn By: SM				
Drawing No. : 5	Sheet: 5 of 6	Date: 12/21/2022	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING	<div><div>TRAFALGAR FIRE</div><div>Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au</div></div>		



Drawing Name: Cable Bundle				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE: <small>(NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm))</small>
Project Title: Ceiling Installations				Fire resistance level:	Drawn By: SM				
Drawing No. : 6	Sheet: 6 of 6	Date: 25/10/2022	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING	<div><div>TRAFALGAR FIRE</div><div>Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au</div></div>		